

4.3 Interpret Statistics in the Media

p.226- 235

A bias source can manipulate statistics to demonstrate any point

i) Using Data Inappropriately

Examine Graphs 1&2 p. 226 and 227

How do the media use statistics inappropriately to convey a message?

1. The same data are illustrated in the graphs.



-Scale of a graph

- sample size

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ii) Challenging the Data

- creating questions and research to validate claims made by a study

Example 1 and 2 p. 228

Example 1

Brand Comparisons

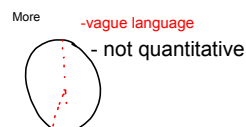
An advertisement made the claim, "In a recent side-by-side blind taste test, more people preferred Cool Cola over Choice Cola." What questions can you ask to challenge or validate this claim?

Solution

Appropriate questions include:

- When was the test carried out?
- How many people participated in the taste tests? "More" could mean 105 people preferred Cool Cola and 104 preferred Choice Cola.
- Who performed the tests? Were they carried out by an independent survey group?
- Were there any other similar taste tests? If so, what were the results?

blind vs double blind

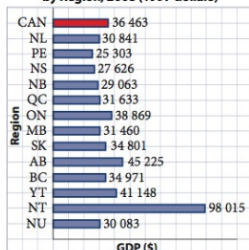


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Gross Domestic Product

The graph shows Canada's real per capita Gross Domestic Product (GDP) by region in 2006.

Real Per Capita Gross Domestic Product (GDP), by Region, 2008 (1997 dollars)



Source: Human Resources and Social Development Canada

a) What is meant by "real," "per capita," and "1997 dollars" in this graph?

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iii) Understanding the language

- "The Prime Minister has the approval of 45% of the population. This is accurate to within three percentage points, 19 times out of 20."

Example 3 p. 229

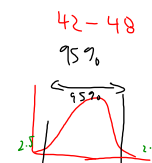
Example 3

Political Polls

A newspaper report included this statement: "The Prime Minister has the approval of 45% of the population. This is accurate to within three percentage points, 19 times out of 20." Explain the meaning of this statement.

Solution

If the poll were conducted 20 times, the results would fall within three percentage points of 45% or between a 42% and a 48% approval rating. This would occur in 19 of the 20 polls or 95% of the time. The greater the sample size, the more accurate the results, meaning the acceptable spread would be less than $\pm 3\%$.



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Key Concepts

- advertisements use statistical claims to convey a message but must be validated using critical thinking
- Data in graphs may not fully explain a situation; research may be needed to validate these claims
- "Real" is often used in statistics to represent the comparative cost of inflation
- Studies will often state a percentage range that a study is accurate to 19/20 or 95% of the conducted trials

Critical Thinking

- scale
- sample size
- questioning techniques

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Hmk. p. 231 -235
q. 1- 4, 6-9, 11*

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